

CLAIMS

A complete listing of all claims is presented herewith:

Claims 1-20 (Cancelled)

21. (Currently Amended) A thermoplastic vulcanizate of four components (A,B,C,D), comprising

- a thermoplastic synthetic resin (A);
- a substantially non-cross-linked polyethylene (B);
- a rubber (C) ~~©~~ having a degree of cross-linking of > 90% and
- a plasticizer (D);

as well as of standard blend ingredients (E) comprising at least one cross-linking agent or cross-linking system, whereby a mixture is comprised of the following quantitative proportions (in % by weight) based on the sum of the four components (A,B,C,D):

- | | |
|-------------------------------------|---------------------------------------------|
| - thermoplastic synthetic resin (A) | 5 to 20 |
| - polyethylene (B) | 25 to 5 or 15 to 5 |
| - rubber (C) | 30 to 50 |
| - plasticizer (D) | 40 to 25 or 50 to 25. |

22. (Currently Amended) The thermoplastic vulcanizate according to claim 21, wherein the standard ingredients (E) of the blend are added in from 0.02 to 0.5 times the amount by weight based on the sum of the four components (A, B, ~~CD~~, D).

23. (Previously Amended) The thermoplastic vulcanizate according to claim 21, wherein the thermoplastic synthetic resin (A) is a propylene based on a homopolymer, block polymer or copolymer in conjunction with high crystallinity.

24. (Previously Amended) The thermoplastic vulcanizate according to claim 21, wherein the polyethylene (B) is a VLDPE with a density of from 0.88 to 0.91 g/cm³ at 20°C and/or a ULDPE with a density of from 0.85 to 0.88 g/cm³ at 20°C.

25. (Previously Amended) The thermoplastic vulcanizate according to claim 21, wherein the rubber (C) is an EPDM rubber, whereby the third monomer is an ethylidene-norbornene.
26. (Currently Amended) The thermoplastic vulcanizate according to claim 21, wherein the rubber (C) has a degree of cross-linking of $> 90\%$.
27. (Currently Amended) The thermoplastic vulcanizate according to claim 21, wherein the plasticizer (D) is a plasticizer oil, or a paraffinic oil with a component of aromatics of $< 4\%$ by weight, or a paraffinic plasticizer oil free of aromatics.
28. (Currently Amended) A method for producing a thermoplastic vulcanizate of four components (A,B,C,D), comprising
- a thermoplastic synthetic resin (A);
 - a substantially non-cross-linked polyethylene (B);
 - a rubber (C) having a degree of cross-linking of $> 90\%$ and
 - a plasticizer (D);
- as well as of standard blend ingredients (E) comprising at least one cross-linking agent or cross-linking system, whereby a mixture is comprised of the following quantitative proportions (in % by weight) based on the sum of the four components (A,B,C,D):
- | | |
|-------------------------------------|---------------------------------|
| - thermoplastic synthetic resin (A) | 5 to 20 |
| - polyethylene (B) | 25 to 5 or 15 to 5 |
| - rubber (C) | 30 to 50 |
| - plasticizer (D) | 40 to 25 or 50 to 25 |
- wherein the rubber (C) is in the still-unvulcanized state is first mixed with a plasticizer (D) and the standard blend ingredients (E) in a roll or screw extruder, whereby the standard blend ingredients still do not yet contain a cross-linking agent or cross-linking system.
29. (Previously Amended) The method for producing a thermoplastic vulcanizate according to claim 28, comprising the following process steps:

- feeding of the unvulcanized rubber (C) and the standard blend ingredients (E);
- meltdown and dispersion of the rubber (C) as well as of the standard blend ingredients (E); and
- addition of the plasticizer (D) while mixing with the two charged components (C), (E).

30. (Previously Amended) The method for producing a thermoplastic vulcanizate according to claim 28,

wherein the plasticizer (D) and the standard blend ingredients (E) are admixed into the unvulcanized rubber (C) in the first third part of the roll or screw extruder.

31. (Currently Amended) The method for producing a thermoplastic vulcanizate according to claim 28,

wherein a mixture comprised of the thermoplastic synthetic resin (A), and the non-cross-linked polyethylene (B) is added downstream of the first third of the roll or screw extruder.

32. (Currently Amended) The A method for producing a thermoplastic vulcanizate according to claim 21, comprising the step of

wherein substantially simultaneously mixing in a roll or screw extruder, the rubber (C) in the still-unvulcanized state ~~is substantially simultaneously mixed~~ with the thermoplastic synthetic resin (A), the non-cross-linked polyethylene (B), the plasticizer (D) and the standard blend ingredients (E), whereby the standard blend ingredients do not yet contain a cross-linking agent or cross-linking system.

33. (Previously Amended) The method for producing a thermoplastic vulcanizate according to claim 32,

wherein the thermoplastic synthetic resin (A), the non-cross-linked polyethylene (B), the plasticizer (D) and the standard blend ingredients (E) are admixed into the unvulcanized rubber (C) in the first third part of the roll or screw extruder.

34. (Previously Amended) The method for producing a thermoplastic vulcanizate according to claim 28,

wherein a non-cross-linked rubber (C) is used, said rubber being present in a flowable state, in the form of a flowable pellet or granulate.

35. (Previously Amended) The method for producing a thermoplastic vulcanizate according to claim 28,

wherein following mixing of the four components (A, B, C, D) and the standard blend ingredients (E) without the cross-linking agent or cross-linking system, the cross-linking agent or the cross-linking system is now added in conjunction with the following steps of the process:

- dynamic vulcanization of the rubber (C) at high shear and expansion rates;
- degassing of the dynamically vulcanized plastic melt, under vacuum; and
- building up the pressure for ejecting the thermoplastic vulcanizate from the mold.

36. (Previously Amended) The method for producing a thermoplastic vulcanizate according to claim 28,

wherein all steps of the method in connection with the addition of the cross-linking agent or cross-linking system are carried out in the second half of the roll or screw extruder.

37. (Previously Amended) The method for producing a thermoplastic vulcanizate according to claim 28,

wherein a cross-linking agent or cross-linking system is used that cross-links the rubber (C), and prevents the polyethylene (B) from cross-linking based on a phenolic resin, in connection with an accelerator consisting of tin dichloride.

38. (Previously Amended) The method for producing a thermoplastic vulcanizate according to claim 28,

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wherein the preparation of the mixture comprised of the four components (A, B, C, D) and all of the standard blend ingredients is carried out in a single-stage process.